This new cultivar was selected by the modified pedigree method. Allen originated from a single F1 plant following the final cross, made in 1961. One hundred plant selections made in the F2 generation were grown as head rows and reselected for crown rust resistance and conformity to a single phenotype. Breeder seed distributed in planting in the spring of 1975 was in the F3 generation. Allen has been tested in replicated yield trials in Indiana since 1968 and in the Regional Uniform Midseason Oat Performance Nursery during 1971-1974.

Allen yields similar to 'Stout,' is very resistant to lodging, heads 1 day earlier than Stout or Clinffield, has a moderately high test weight and high groat protein percentage (18.0 to 18.5%), and has a high great percentage relative to other commercially grown varieties.

Allen is resistant to crown rust (Puccinia coronaria Cda, f. sp. avenue Eriks. and E. Henn.) races 213, 219, and 290, and stem rust (Puccinia graminis Pers. f. sp. avenue Eriks. and E. Henn.) races U572 and U519. Allen has developed up to 3% smutted panicles when inoculated with smut (Ustilago spp.) races prevalent in Indiana. Smut in Allen was more severe in tests in other states in 1974. Allen is moderately susceptible to the barley yellow spot and gray leaf spot.

Allen coleoptiles are white (lack pigment). Culms are generally erect, although they bow somewhat at the base. They are resistant to node bending. Flag leaf blades are generally upright. First leaf blades below the flag leaves are generally drooping. Leaf margins and culm internodes are glabrous. Culms are yellow. Ligules are present and wrap tightly around the culm. Average width and length of the first leaves below the flag leaves are 1.5 to 1.6 mm wide and 14 to 18 mm long. Panicles are equal-lateral, branches are short and ascending and arise at the lower rachis node. The rachis is flexuous. Awns are absent. Lemmas are glabrous and average 14 mm long. Allen has slightly darker lemmas than Clinffield at maturity.

Breeder seed will be maintained by the Purdue Univ. Agric. Exp. Stn., West Lafayette, Ind.

Variety protection has been applied for under Public Law 91-577, in accordance with the certified seed option.

REGISTRATION OF GERMPLASMS

REGISTRATION OF T-68 BIRDFOOT TREFOIL GERMPLASM

R. R. Seaney, T. E. Devine, and D. L. Linscott

'T-68' is a population of bird foot trefoil (Lotus corniculatus L.) developed cooperatively by the ARS-USDA, and the Cornell Agric. Exp. Stn., Ithaca, New York, and released because of its tolerance to (2,4-dichlorophenoxy) acetic acid (2,4-D).

Seventy-five clones, selected for desirable agronomic characteristics from a broad range of plant introductions in a field nursery at Ithaca N.Y., were progeny tested for tolerance to 2,4-D. Thirty-four clones selected on the basis of progeny tolerance were intercrossed, and the resulting population was used for four additional cycles of phenomenotypic recurrent selection for 2,4-D tolerance. Field-grown plants were sprayed with 2,4-D and selected for vigor of regrowth. Plants of the fifth cycle were intercrossed, and the resulting seed was used for the propagation of T-68.

Laboratory and greenhouse studies indicated that T-68 was significantly more tolerant than the cultivars 'Granger', 'Empire', 'Mansfield', 'Tans' and 'Viking' to 2,4-D and its homologs and analogs. 4-(2,4-Dichlorophenoxy) acetic acid (2,4-A), (2,4-Dichlorophenoxy) β-hydroxybutyric acid (2,4-D-β-OH-B), 4-(2,4-Dichlorophenoxy) β-hydroxybutyric acid (2,4-D-β-OH-B).

Seeds and established plants of susceptible cultivars and T-68, grown in the greenhouse and field and sprayed with 1.7 or 2.2 kg/ha of 2,4-D, developed typical injury symptoms such as stem and terminal leaf curvature, stunting of growth, and browning of leaves. Plants of susceptible cultivars were severely stunted or killed. However, T-68 plants initiated new growth from crown and lower stem buds and resumed normal growth and development.

T-68 would be of value for variety synthesis and for the study of the mechanisms of herbicide selectivity. Seed of T-68 has been placed in storage at the National Seed Storage Laboratory at Fort Collins, Colo. Small amounts of seed (500 seeds or less) are available from the ARS-USDA, Dep. of Agronomy, Cornell Univ., Ithaca, NY 14853.

REGISTRATION OF SIX MAIZE GERMPLASM POPULATIONS

R. H. Peterson, J. L. Geadelmann, E. H. Rinke, and J. C. Sents

Six maize (Zea mays L.) populations were developed by the corn research project of the Minnesota Agric. Exp. Stn. They were released in 1972 because of their potential value in breeding programs. Breeder seed of these populations is maintained by the Minnesota Agric. Exp. Stn. and can be obtained from the Dep. of Agronomy and Plant Genetics, Univ. of Minnesota, St. Paul, MN 55108.

AS-A (Reg. No. GP 64) was developed from controlled six and eight-way crosses among 13 inbred lines (A90, A498, A508, A509, A513, CM35, M3134, ND203, WI3, W59M, W65, W79A, and WI103). These crosses were randomly mated for six generations to produce the population. AS-A was used in a study of recurrent selection methods conducted by Carangal et al. AS-A is of AES200 maturity and has yellow dent kernels and good stalk strength.

AS-B (Reg. No. GP 65) was developed from 12 inbred lines (A90, A498, A508, A509, A513, ND205, R5, V3, W38, W65, W79A, and WI103). Emphasis was placed on earliness in that W103 made up 5/16 of the base population. Controlled crossing among the 12 inbred lines produced eight-way crosses, and these crosses were randomly mated for six generations. AS-B is of AES200 maturity and has yellow dent kernels and good stalk strength.

AS-D (Reg. No. GP 66) was developed from crosses involving eight inbred lines (AT3, B14, CO106, ND255, OH45, V3, W1D, and W9D). Selections from these crosses were randomly mated for six generations. The population was then subjected to several cycles of mass selection for early flowering and resistance to smut (Ustilago maydis (DC)CDA). AS-D is of AES100-200 maturity and has yellow semident kernels.

AS-G (Reg. No. GP 67) was developed by crossing Nethelands and U.S.S.R. introductions with early-flowering selections from


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